



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,553	06/18/2001	Robert Wasthuber	56/353	2380
7590	01/23/2006		EXAMINER	
JOHN C. FREEMAN BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60610			QURESHI, AFSAR M	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/884,553	WASTLHUBER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Afsar M. Qureshi	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 October 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-36,38-45,47,48 and 50-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-36,38-45,47,48 and 50-55 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/18/01/7/19/04. Oct 12 - 01
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

***Response to Amendment***

1. This action is responsive to amendments received on 10/28/2005. Amendments are entered as requested. Claims 37, 46 and 49 are cancelled.

***Response to Arguments***

2. Applicant's arguments filed on 10/28/2005 have been fully considered but they are not persuasive.

The amendment made to claims 1 and 29 makes the claim language clearer, however, it has not changed the scope or limitation of the claims. The Examiner believes the added portion “*...from said position measuring system to said processing unit*” was evident and understood from line 3-4 of said claims and makes claim 2 almost redundant. The following rejection still covers all the limitations in the claims including the added/amended portion.

Applicant argued that Rehm et al. (US 5,909,371) is silent whether the data during periods RZ1 and RZ2 regards transmitted up-to-date position data. The Examiner contends that the data between RZ1 and RZ2 is an ‘updated’ data, as is evident from col. 3, lines 45-61, and can be regarded as claimed “up-to-date position data”.

Applicant further argued that the word “always” was omitted in the rejection of claim 1. However it is evident from col. 2, lines 42-53 (Rehm), the not time-critical data is only interrupted and always resumed immediately after pending other non-time-critical computer processes.

The rational to modify or combine the prior art does not have to be expressly stated in the prior art; the rational may be, expressly or impliedly, revealed from knowledge generally available to one of ordinary skill in the art, established scientific principles or legal precedent established by prior case laws. *In re Fine*, 837 F.2d 1071, 5USPQ2d1596 (Fed. Cir. 1988), and, *Ex Parte Levingood*, 28 USPDQ 2d 1300. All those variations in the alternative structure that fall within the scope of this invention can readily be conceived by one of skill in the art.

**3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

4. Claims 1-10, 16-21, 28-36, 38-45, 47-48, 50-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl et al. ('Hagl'), U.S. 5,687,103, in view of Rehm et al. ('Rehm'), U.S. 5,909,371.

**Regarding claims 1, 2, 29, 36 and 47**

Hagl discloses a method or device for serial data transmission between a position measuring system and a processing unit (See Fig. 1, blocks 100 and 400, RZ1-2, R12, R13, R11 processors), comprising: transmitting position data and further data from said position measuring system to said processing unit in serial form as digital data words (*Measuring device transmit the angle position as a binary data word to the processing unit. See column 3, lines 3-6*); transmitting up-to-date position data between

said position measuring system and said processing unit upon transmission of a position request command (commands from the processing units are sent to the position measuring device to retrieve current data. Status command A is used in the example of this reference. See column. 3, lines 40-54 and 58-64).

Hagl, however, fails to disclose always transmitting further data, whose processing is *not time-critical*, immediately following said transmitting said up-to-date position data.

Rehm, in the same field of endeavor, discloses the process of data, whose processing is not time-critical, immediately following said transmitting the up-to-date position data (Figure 2. RZ1 and RZ2 are time critical data. Non-time critical data of FZ1 always immediately follow time critical data in figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl method to process non-time-critical, immediately following transmitting said up-to-date position data, the motivation being that by transmitting non-time-critical immediately following the transmitting said up-to-date position data, bandwidth would not be wasted between time critical transmission between the 2 devices.

#### Regarding claims 3 and 4

Hagl discloses the method, wherein said further data is transmitted between the position measuring system and the processing unit (See Fig. 1, blocks 100 and 400).

Rehm discloses the method, in accordance with claim 1, further comprising transmitting a position request command for requesting said up-to-date position data

(Column1, lines 16-24. Figure 2. RZ1 and RZ2 are time critical data) and always transmitting immediately following said position request command, further data (Non-time critical data of FZI immediately follow time critical data in figure 2) whose processing is not time-critical.

Regarding claims 5-7 and 9

Hagl discloses that said up-to-date position data and said position request command is transmitted in the form of digital data words of a pre-determined word length, or as data packets comprising digital data words (Sampling signals are amplified and converted into digital signals for a binary word. See column 3, lines 3-12).

Regarding claims 8 and 10

Hagl discloses that additional non-time-critical data comprises additional data and additional data commands (beside the position data, there is also other data request commands and other corresponding data to these data requests like status commands and their responses to commands A-F. See column 3, lines 59-67; See column 4, lines 1-42).

Regarding claim 16

Hagl discloses the method wherein all data transmitted between the position measuring system and the processing unit is transmitted over a common data channel (See column 2, lines 23-24).

Regarding claim 17

Hagl discloses the method wherein data transmitted from said position measuring system to said processing unit are transmitted via a first data channel, and

said data transmitted from said processing unit to said position measuring system are transmitted via second data channel (See Fig. 1, lines 500).

Regarding claims 18 and 19

The disclosed by Hagl further comprising storing said non-time-critical data (See Fig. 1, block 900; See column 4, lines 1-2).

Regarding claim 20

Hagl discloses the method that further comprises the steps of storing non-time-critical data transmitted by said position measuring system in a second memory unit of said processing unit (status command D can be used to send saved parameters at the processing unit to the position measurement device (see column 4, lines 33-35)).

Regarding claim 21

Hagl discloses the method, further comprising transmitting memory unit status data, which contain at least information regarding an actual memory status of a memory unit (using command B, one can read or write data into memory. See column 4, lines 1-21).

Regarding claim 28

Hagl discloses the method including steps wherein with said transmitting of either of said digital data words or data packets, a data word identification is transmitted, which unequivocally identifies a beginning and type of digital data word or data packet (start bit is used to identify the beginning of the word. Different types of parameters were also described. See column 4, lines 36-37, 55; See column 5, lines 25-26; See column 6, lines 53-67).

Regarding claim 30

Hagl does not specifically disclose a second control unit within processing unit as claimed herein. However, Rehm discloses the device in accordance with claim 29, wherein said processing unit (Figure 1, RZ1-2 processors) comprises a second control unit (Figure 1, RZ1-2 processors), which causes transmission of said position request command to said position measuring system for requesting position data (Column 1, lines 16-24) and, following said transmission of the position request command always causes said transmission of further data (Figure 2. RZ1 and RZ2 are time critical data. Non-time critical data of FZI immediately follow time critical data in figure 2), whose processing is not time-critical.

Regarding claim 31

Hagl disclosed the method, wherein all data transmitted between said position measuring system and said processing unit are transmitted over a common data channel '(See column 2, lines 23-24).

Regarding claim 32

Hagl discloses the device comprising a first data channel and a second channel for transmitting data between said position measuring system and said processing unit, wherein said first data channel transmits data in a first direction and said second data channel transmits data in a direction opposite to said first direction (See Fig. 1, lines 500).

Regarding claim 33

Hagl disclose the method steps comprising storing said non-time-critical data (See Fig. 1, block 900; See column 4, lines 1-2).

Regarding claim 34

Hagl discloses the method, comprising storing non-time-critical data transmitted by said position measuring system in a second memory unit of said processing unit (Status command D can be used to send saved parameters at the processing unit to the position measurement device (see column 4, lines 33-35)).

Regarding claim 35

Hagl discloses the device, wherein said control unit comprises a processor (The figure describe the position measuring device including control circuitry and processor circuitry. See Fig. 1, block.100).

Regarding claims 38 and 50

Rehm discloses the method in accordance with claim 36, wherein parameters of said position measuring system are transmitted via said nontime-critical signals (Column 1, lines 25-30).

Regarding claims 39 and 51

Rehm discloses the method, in accordance with claim 36, wherein measured temperature values are transmitted via said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1. This can be understood as temperature reading).

Regarding claim 40 and 52

Art Unit: 2667

Rehm disclosed the method in accordance with claim 36, wherein diagnostic data of said position measuring system are transmitted via said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1).

Regarding claims 41 and 53

Rehm discloses the method in accordance with claim 36, wherein assignment information is transmitted or processed with each of said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1).

Regarding claim 42

Rehm disclosed the method .in accordance with claim 36, further comprising requesting, via said processing unit, transmission or process of said non-time-critical signals from said position measuring system (Column 1, lines 16-30).

Regarding claim 43'and 54, Hagl and Rehm disclosed a method or device for serial data transmission between a position measuring system and a processing unit as described in claim 1 above.

Regarding claims 43 and 54

Hagl discloses data transmitted as a binary data word between the position-measuring device and the processing unit (See column .3, lines 3-6).

Regarding claim 44

Rehm disclosed the method in accordance with claim 3, wherein data transmitted from said position measuring system to said processing unit are transmitted via a first

data channel (Figure 1. Column 1, lines 50-55), and said data transmitted from said processing unit to said position measuring system are transmitted via a second data channel (Figure 1. Column 1, lines 50=55).

Regarding claim 45

Rehm disclosed the method in accordance with claim 36, wherein up-to-date position data always occurs, between said non-time critical signals (Figure 2. RZ1 and RZ2 are time critical data, processed between non-time critical data of FZI as indicated in figure 2).

Regarding claim 48

Rehm disclosed the system in accordance with claim 47, further comprising: A first data channel in communication with said position measuring system and said processing unit and transmitting data from said position measuring system to said processing unit (Column 1, lines 16-25; Column 3, lines 50-55); and a second data channel in communication with said position-measuring system and said processing unit and transmitting data from said processing unit to said position-measuring system (Column 1, lines 16-25; Column 3, 'lines 50-55).

Regarding claim 55

Rehm disclosed the method in accordance with claim 36, wherein said non-time-critical signals are chronologically distributed over several blocks (Figure 2, FZI blocks).

5. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl in view of Rehm and in further view of Kurten (DE 4005087 CI).

Regarding claims 11-15

The combined invention of Hagl and Rehm disclose a method or device for serial data transmission between a position measuring system and a processing unit as described in the rejection of claim 1 above.

Hagl and Rehm, however, fail to disclose the ability of interrupting the transmission of non-time-critical data upon detecting a position data request command.

Kurten teaches the ability of immediately interrupting processing a current process in responding to a more priority processing command and continuing with the current process once the more priority or urgent processing command is completed at a later time (See column 2, lines 38-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the interrupting feature as taught by Kurten into the combined invention by Hagl and Rehm. Thus, by incorporating the interrupting feature, a more urgent data can be responded immediately for parameters that are time sensitive on a priority basis and continuing with the non-time sensitive at a later time.

6. Claims 22-24, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl in view of Rehm and in further view of Kent (U.S. 5,371,859).

Regarding claims 22-24 and 26,

Hagl and Rehm, in combination, fail to specifically disclose that different position request commands can be assigned with different processing priorities.

However, Kent teaches the ability of assigning different levels of priority to a message and messages are processed in the order of assigned priority levels (See column 7, lines 10-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl & Rehm method to assign different priority levels to position request commands, the motivation being that by processing position request commands depending on different levels of priorities, one can assure that data that are more critical for control purposes can be processed immediately before other parameters.

7. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl, Rehm, Kurten (DE 4005087 CI) and in further view of Kent (U.S. 5,371,859).

Regarding claims 25 and 27

Hagl and Rehm disclose a method or device for serial data transmission between a position measuring system and a processing unit as described in the rejection of claim 1 above. Hagl & Rehm, however, fail to disclose the ability of interrupting the transmission of non-time-critical data upon detecting a position data request command and fail to disclose different position request commands can be assigned with different processing priorities. Kurten teaches the ability of immediately interrupting processing a current process in responding to a more priority processing command and continuing with the current process once the more priority or urgent processing command is

completed at a later time (See column 2: lines 38-42). Kurten is silent about assigning different levels of priority to a message that are being processed in the order of assigned priority levels.

However, Kent teaches the ability of assigning different levels of priority to a message and messages are processed in the order of assigned priority levels (See column 7, lines 10-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the interrupting feature and to assign different priority levels in order to position request commands as taught by Kent. It would have motivated one skilled in the art, to be able to stop the current process and proceed with a more urgent and more priority request for a more time sensitive parameter.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M. Qureshi whose telephone number is (571) 272 3178. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272 3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**AFSAR QURESHI  
PRIMARY EXAMINER**

1/19/2006